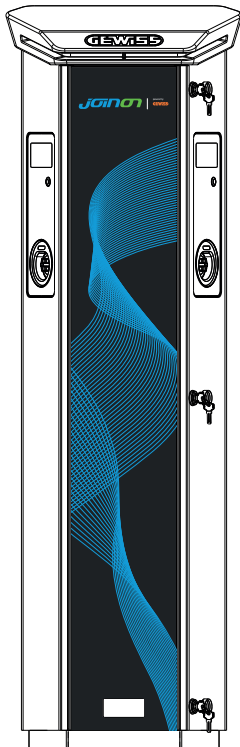


JOINON I-ON EVO RANGE

EN User and installation manual



I-ON EVOLUTION

CONTENT

Introduction	4
Features	5
Applications	5
1. I-ON EVO User Interface.....	6
2. Specification	7
2.1 Product Specification - I-ON Column	7
2.2 Product Specification - I-ON EVO wallbox	10
2.3 General and Country-specific requirements	12
2.4 I-ON EVO code description	13
2.5 LED Indication and Operation Status	14
2.6 Dimensions	15
3. Device delivery and storage	16
3.1 Delivery.....	16
3.2 Device Identification.....	16
3.3 Damage during transport	16
3.4 Storage	16
3.5 Device Handling.....	17
4. Installation prerequisites	20
4.1 Before Installation	20
4.2 Environment.....	21
4.3 Support and fixing surface (column version)	21
4.4 Support and fixing surface (wallbox version).....	23
4.5 Installation area safety requirements.....	23
4.6 Grounding and safety requirements.....	24
5. Device installation and Electrical connection	28
5.1 General installation requirements.....	29
5.2 Device installation (column version).....	29
5.3 Connection procedure	31
5.4 Device installation (WallBox version)	34
5.5 Phase rotation	40
6. Multi CP system installation	41
6.1 Introduction	41
6.2 I-ON EVO specific characteristics	41

6.3 Connection between charging points	42
6.4 Topology 1: “Daisy Chain”	42
6.5 Topology 2: star connection	44
6.6 Connection of metering devices.....	45
6.7 External sensor positioning instructions	46
7. Functional Specification.....	47
7.1 Basic functions.....	47
7.2 Dynamic MultiCP Mode	47
7.3 Language button.....	48
8. How to Charge Your Electric Vehicle	48
8.1 Autostart.....	49
8.2 RFID reader	50
9. Charger setting from the On-Board portal.....	52
9.1 Accessing the On-board Portal	52
9.2 Basic structure of the On-board Portal	54
9.3 Configuration section	54
9.4 Logs section	55
9.5 Charging log section	57
9.6 RFID section.....	57
10. I-ON EVO Configuration as a single station	58
10.1 Step 1: Operating parameter setting.....	58
10.2 Step 2: Internet Network Setup	59
11. DLM MultiCP: server configuration	61
11.1 Introduction	61
11.2 First steps	62
11.3 DLM MultiCP: Clients configuration	64
12. UK Market additional requirements.....	65
13. Error encoding and troubleshooting	66
13.1 Error code list	66
13.2 Troubleshooting for the installer.....	68
14. Assistance	71

Introduction



It is important to note that the information in this document is subject to change without notice. Please download the latest version from www.gewiss.com

The JOINON I-ON EVOLUTION charging system is the best choice for powering battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). It is designed for fast charging in both public and private locations, including retail and commercial car parks, fleet charging stations, motorway service areas, workplaces, and homes. The JOINON I-ON EVOLUTION stands out for its easy installation.

The I-ON EVOLineup offers users the flexibility to choose between wall-mounted or full-tower solutions.

This AC charging solution also features network communication capabilities, allowing it to connect with remote network systems and provide electric car drivers with real-time information.

Additionally, the AC charging solution boasts a simple user interface with security certifications and an excellent waterproof and dustproof design, making it the optimal choice for outdoor environments.

The document is the user manual for the following charge points

Code	Description	Market	Power
GWJ1502TK	I-ON EVOMulti CP (with auth) T2S 7.4kW M-UK	UK	7.4kW + 7,4kW
GWJ1504TK	I-ON EVOMulti CP (with auth) T2S 22kW M-UK	UK	22kW + 22kW
GWJ2502TK	I-ON EVOMulti CP (with auth) T2S 7.4kW M-UK	UK	7.4kW + 7,4kW
GWJ2504TK	I-ON EVOMulti CP (with auth) T2S 22kW M-UK	UK	22kW + 22kW

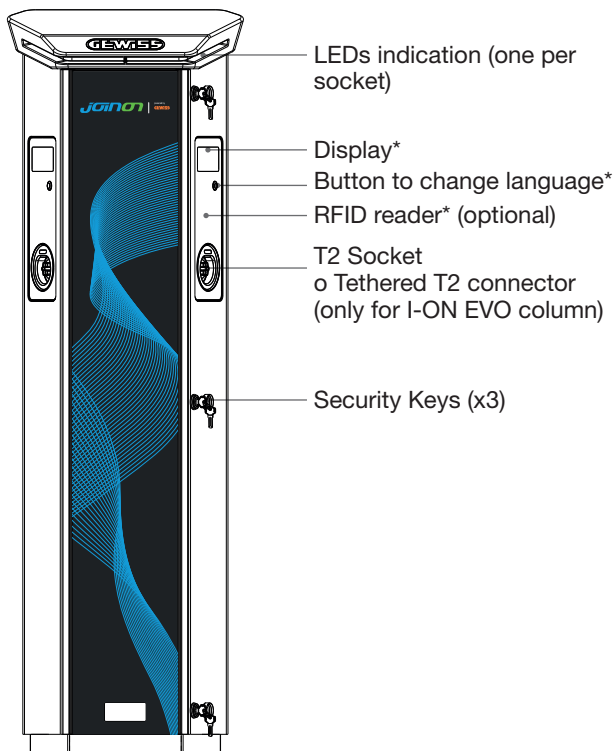
Features

- The wall-mounted design makes installation easy and flexible.
- Full tower offers a fully integrated solution with all protection devices already installed.
- It offers customers the convenience of controlling the start and stop of charging from an authorized RFID smart card or mobile app (available on request).
- Built to the latest industry standards for AC charging.
- Outdoor rating to withstand solid and liquid intrusion in outdoor environments makes the unit more stable and reliable.
- I-ON EVOfloor has IK11 rating while I-ON EVOwall is IK10
- 4,3” LCD colour screen interface.
- Language easily interchangeable with a single button.
- Front panel fully customizable on request.

Applications

- Public and private parking areas
- Community parking areas
- Hotel, supermarket and shopping center car parks
- Workplace parking areas

1. I-ON EVO User Interface



Notice: According to EN-17186 requirement, this document lays down harmonized identifiers for power supply for electric road vehicles. The requirements in this standard are to complement the informational needs of users regarding the compatibility between the EV charging stations, the cable assemblies and the vehicles that are placed on the market. The identifier is intended to be visualized at EV charging stations, on vehicles, on cable assemblies, in EV dealerships and in consumer manuals as described.

2. Specification

2.1 Product Specification - I-ON Column

Model name	GWJ1502TK - GWJ1504TK	
AC INPUT	Voltage Rating	230 Vac ($\pm 15\%$) 400 Vac ($\pm 15\%$)
	Max Input Current	64 A
	Max. Input Power	2x 22 kVA
	Power Grid System	TN / TT
	Frequency	50/60 Hz
	Electrical Distribution	1P+N+PE 3P+N+PE
Input Protection	Available inside the charging station	<ul style="list-style-type: none"> • PEN fault • OVP • OPP • MCB -125 A - 4P - Curve D
Internal Protection	DC leakage (Trip for DC residual current at 6mA) MTHP 160 4P 125A	
	per each side: SPD protection (VM:115-750V - ITM: 6K-10K A TA: -55°C - +85°C – Surge Current: 10kA) RCCB (2P or 4P - 40A - Type A - 30mA) MCB (2P or 4P - 40A - Curve D)	
Mechanical Specifications	Weight	• T2 socket model: 48,5 kg
	Protection Degree	IP 55
	Mechanical resistance	IK 11 (Excluding Display)
	Protection against electric shock	Class I
Electrical specifications	Energy Meter type	MID Energy Meter
Environmental Conditions	(external)	-25 °C; + 55°C * * It must not be exposed to direct sunlight.
	Storage Temperature	-40°C; +70°C
	Relative Humidity	5%~95% RH
	Altitude	≤ 2000 m
	Pollution degree	3

I-ON EVOLUTION

Model name	GWJ1502TK - GWJ1504TK	
Communication	External	<ul style="list-style-type: none"> • Wi-Fi External • Ethernet 10/100
	Internal	-
Regulation for EU	Directive	<ul style="list-style-type: none"> • 2014/53/EU • 2011/65/EU + 2015/863 • Electromagnetic compatibility EMC classification: B
	Standard	<ul style="list-style-type: none"> • EN IEC 61851-1 • EN IEC 61851-21-2 • EN IEC 63000 • ETSI EN 301 489-3 V2.1.1 • ETSI EN 301 489-17 V3.2.4 • ETSI EN 301 489-52 V1.2.1 • ETSI EN 301 908-13 V13.2.1 • ETSI EN 300 328 V2.2.2 • ETSI EN 300 330 V2.1.1 • EN IEC 62311
	Standard socket	<ul style="list-style-type: none"> • EN 62196 Type 2 Mode 3
Regulation for the UK (only for GWJ1502TK, GWJ1504TK)	Regulation	<ul style="list-style-type: none"> • Radio Equipment Regulation 2017 (UK RED Regulations) • The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012
	Standard	<ul style="list-style-type: none"> • BS EN IEC 61851-1 • BS EN IEC 61851-21-2 • BS EN IEC 63000 • ETSI EN 301 489-3 V2.1.1 • ETSI EN 301 489-17 V3.2.4 • ETSI EN 301 489-52 V1.2.1 • ETSI EN 301 908-13 V13.2.1 • ETSI EN 300 328 V2.2.2 • ETSI EN 300 330 V2.1.1 • BS EN IEC 62311 • BS 8300-1 • Paragraph 722.411.41(iv) of BS 7671:2018/A1:2020.
	Standard socket	<ul style="list-style-type: none"> • BS EN 62196 Type 2 Mode 3

Model name	GWJ1502TK - GWJ1504TK	
User Interface	User Authorization	<ul style="list-style-type: none"> • None • RFID reader (ISO 14443A/B support) • Via app • Via OCPP
	Charge Status Information	<ul style="list-style-type: none"> • LED & LCD colour screen for each charging point
Charging Interface		<ul style="list-style-type: none"> • T2 socket
Standby Power	15W	
Other	<ul style="list-style-type: none"> • Intended for use by ordinary person • Locations with non-restricted access • In UK the use of software controlled means cannot be used to control isolating devices 	

2.2 Product Specification - I-ON EVO wallbox

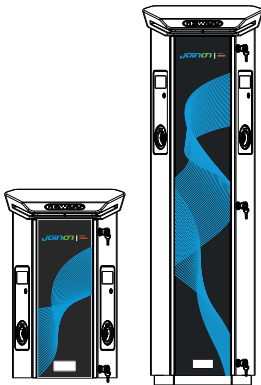
Model name	GWJ1502TK - GWJ1504TK	
AC INPUT	Voltage Rating	230 Vac ($\pm 15\%$) 400 Vac ($\pm 15\%$)
	Max Input Current	64 A
	Max. Input Power	2x 22 kVA
	Power Grid System	TN / TT
	Frequency	50/60 Hz
	Electrical Distribution	1P+N+PE 3P+N+PE
Input Protection	Available inside the charging station	<ul style="list-style-type: none"> • PEN fault • OVP • OPP • MCB - 125A - 4P - Curve C
Internal Protection	DC leakage (Trip for DC residual current at 6mA)	
	per each side:	
	SPD protection (VM:115-750V - ITM: 6K-10K A TA: -55°C - +85°C – Surge Current: 10kA) RCBO (2P or 4P - 32A - Type A - 30mA - Curve C)	
Mechanical Specifications	Weight	• T2 socket model: 31 kg
	Protection Degree	IP 55
	Mechanical resistance	IK 10
	Protection against electric shock	Class I
Electrical specifications	Energy Meter type	MID Energy Meter
Environmental Conditions	Operation Temperature (external)	-25 °C; + 55°C * (Current derating from 50°C) * It must not be exposed to direct sunlight
	Storage Temperature	-40°C; +70°C
	Relative Humidity	5%~95% RH
	Altitude	≤ 2000 m
	Pollution degree	3
Communication	Internal	<ul style="list-style-type: none"> • Wi-Fi • Ethernet port 10/100

Model name	GWJ1502TK - GWJ1504TK	
Regulation for EU	Directive	<ul style="list-style-type: none"> • 2014/53/EU • 2011/65/EU + 2015/863 • Electromagnetic compatibility EMC classification: B
	Standard	<ul style="list-style-type: none"> • EN IEC 61851-1 • EN IEC 61851-21-2 • EN IEC 63000 • ETSI EN 301 489-3 V2.1.1 • ETSI EN 301 489-17 V3.2.4 • ETSI EN 301 489-52 V1.2.1 • ETSI EN 301 908-13 V13.2.1 • ETSI EN 300 328 V2.2.2 • ETSI EN 300 330 V2.1.1 • EN IEC 62311
	Standard socket	<ul style="list-style-type: none"> • EN 62196 Type 2 Mode 3
Regulation for the UK (only for GWJ2502TK, GWJ2504TK)	Regulation	<ul style="list-style-type: none"> • Radio Equipment Regulation 2017 (UK RED Regulations) • The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012
	Standard	<ul style="list-style-type: none"> • BS EN IEC 61851-1 • BS EN IEC 61851-21-2 • BS EN IEC 63000 • ETSI EN 301 489-3 V2.1.1 • ETSI EN 301 489-17 V3.2.4 • ETSI EN 301 489-52 V1.2.1 • ETSI EN 301 908-13 V13.2.1 • ETSI EN 300 328 V2.2.2 • ETSI EN 300 330 V2.1.1 • BS EN IEC 62311 • BS 8300-1 • Paragraph 722.411.41(iv) of BS 7671:2018/A1:2020.
	Standard socket	<ul style="list-style-type: none"> • BS EN 62196 Type 2 Mode 3

Model name		GWJ1502TK - GWJ1504TK	
User Interface	User Authorization	<ul style="list-style-type: none"> • None • RFID • Via app 	
	Charge Status Information	<ul style="list-style-type: none"> • LED & LCD colour screen for each charging point 	
Charging Interface		<ul style="list-style-type: none"> • T2 socket • T2 tethered cable • Type E or Type F socket (GWJ15-22-32-24-34-T) 	
Standby Power	15W		
Other	<ul style="list-style-type: none"> • Intended for use by ordinary person • Locations with non-restricted access • In UK the use of software controlled means cannot be used to control isolating devices 		

2.3 General and Country-specific requirements

2.3.1 General requirements

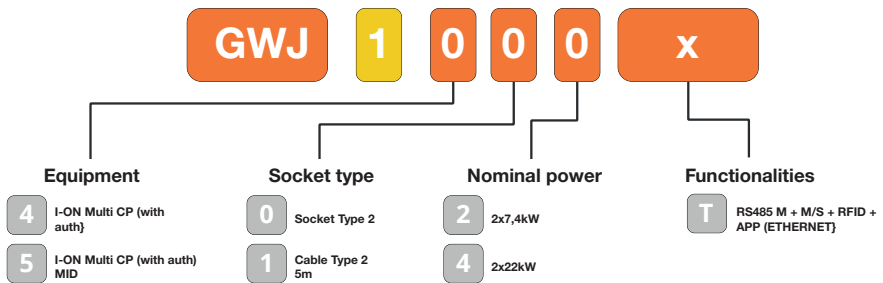


In case of short-circuit, the value of I_{2t} at the EV socket-outlet of the Mode 3 charging station shall not exceed 75000 A2s.

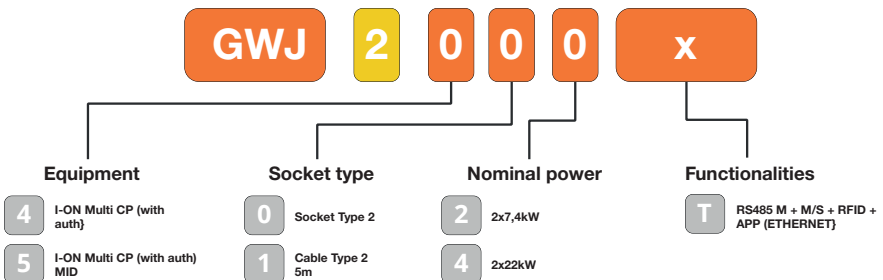
2.4 I-ON EVO code description

I-ON EVO is available in different versions depending on the connector type, power of charge, display availability and other internal devices. The table below describes the meaning of the number and letter.

I-ON CODE DESCRIPTION



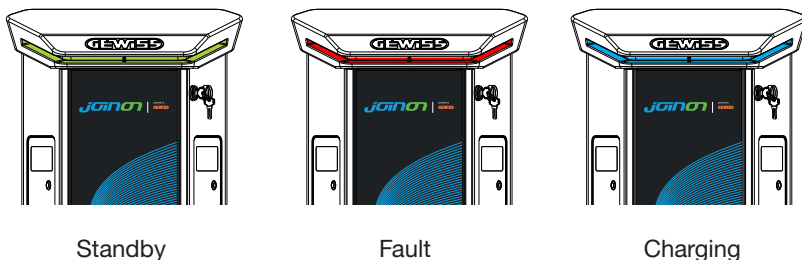
I-ON WALL CODE DESCRIPTION



2.5 LED Indication and Operation Status

The charging station informs the customer of the status and which actions to perform through the use of RGB LEDs.

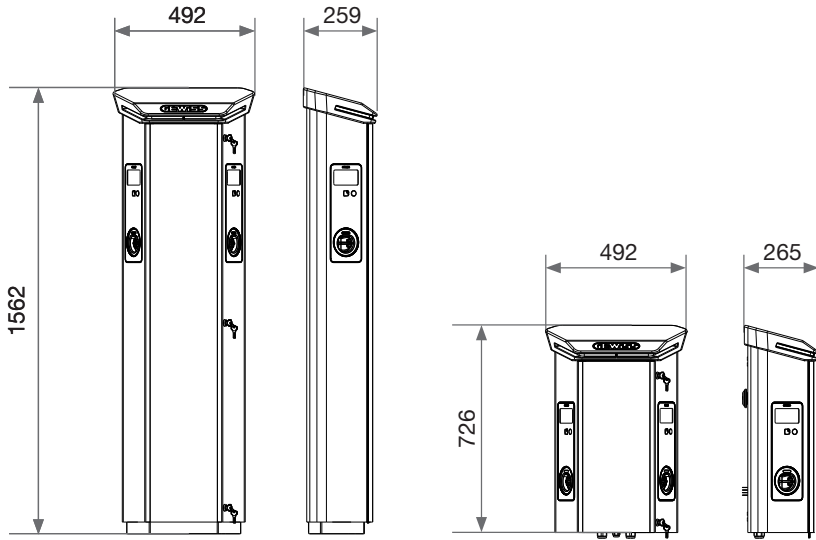
Below the meaning of the various colors is explained.



Colour	Solid	Flashing
No colour	The charging station is OFF	
	The charging station is rebooting to apply the new FW	
White	APP and Charging station connection (via Wi-Fi) OK (overlaid on the base colour)	Hotspot Wi-Fi active (overlaid on the base colour)
		The charging station has a SERVER role
Green	Charging station available	Waiting for the plug-in or plug-out of the recharge cable
Red	Error connecting or configuring the Server/Client dynamics	N/A
	Internal error	N/A
Blue	Charging session in progress, system powered	Charging session suspended or battery charged
Orange	N/A	Breath flashing: applying new FW after download
		Flashing: Downloading FW via OTA

2.6 Dimensions

2.6.1 Main Size of Charger:(Unit: mm)



3. Device delivery and storage

3.1 Delivery

Keep the device packaged until the installation

3.2 Device Identification

The serial number of the device identifies it unequivocally.

In any communication with Gewiss, reference must be made to this number.

The device serial number is indicated on the technical data label (on the right side of the front panel).

3.3 Damage during transport

If the device was damaged during transport:

1. Do not install it.
2. Notify the fact immediately (within 5 days of delivery).

If it is necessary to return the device to the manufacturer, the original packaging must be used.

3.4 Storage

If the device is not installed immediately upon delivery, to avoid its deterioration, proceed as indicated below:



Failure to observe the instructions provided in this section could cause damage to the device. The manufacturer declines all responsibility for damage deriving from the failure to observe these instructions.

- To correctly conserve the charging station, do not remove the original packaging until the moment it is installed.
- Deterioration of the packaging (cuts, holes, etc.) prevents the correct conservation of the charging station before installation. The manufacturer declines all responsibility relative to the consequences caused by packaging deterioration.
- Keep the device clean (remove dust, chips, grease, etc.) and avoid the presence of rodents.
- Protect it against water spray, welding sparks, etc.

- Cover the device with a protective breathable material to avoid condensation caused by environmental humidity.
- Charging stations kept in a warehouse must not be subjected to climatic conditions other than those indicated below

Ambient storage conditions	
Minimum temperature	-40°C
Minimum temperature of the surrounding air	-40°C
Maximum temperature of the surrounding air	70°C
Maximum relative humidity without condensation	95%

- It is very important to Protecting the system against corrosive chemical products and saline environments is very important.

3.5 Device Handling

During transportation, the device must be protected against mechanical shock, vibrations, water spray (rain), and any other product or situation that could damage it or alter its behaviour.



WARNING: When moving the devices, keep them horizontal.
Do not put pressure on the recharging socket-outlets.

3.5.1 Handling with a pallet truck

At least the following provisions must be observed:

1. Set the stations down (still packaged) in a central position in relation to the forks.
2. Position them as close as possible to the point where the forks are joined to the upright.
3. In any case, respect the instructions given in the pallet truck user manual.

3.5.2 Handling with a forklift

At least the following provisions must be observed:

1. Set the stations down (still packaged) in a central position in relation to the forks.
2. Position them as close as possible to the point where the forks are joined to the upright.
3. Make sure the forks are perfectly levelled, to avoid any risk of the device tipping over.
4. In any case, respect the instructions given in the forklift user manual.

Only unpack the charging station after bringing it to the place of installation, when you are ready to install it.

At this point, it can be transported vertically and without its packaging, but only for a short distance.

3.5.3 Handling the unpackaged device

At least the following provisions must be observed:

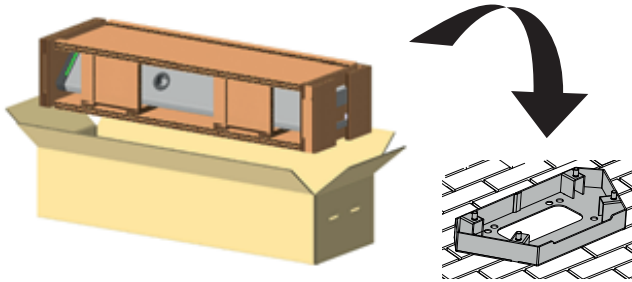
1. Follow the fundamental ergonomic recommendations to avoid injuries when lifting weights.
2. Do not release the device until it is perfectly fastened or positioned.
3. Follow the instructions of another person who guides the movements to be made.

3.5.4 Unpacking

The correct handling of the charging stations is very important to:

- Avoid damaging the packaging that maintains their optimum condition, from shipment to the moment they are installed.
- Avoiding knocking or dropping the charging stations as this could jeopardize their mechanical properties.
- Avoid, as far as possible, the vibrations that could cause subsequent abnormal operation.

To allow the installer to prepare the column fixing area beforehand, the base is inserted in the packaging in such a way that it can be taken out separately from the charging unit. The base can therefore be removed from the packaging and installed on the ground, attached to the tie-rods embedded in the cement or to the anchor plugs already fitted in the ground (as shown below):



3.5.5 Packaging disposal

The packaging is 100% cardboard, and can be taken to an authorized sorted waste collection point.

4. Installation prerequisites

4.1 Before Installation

- Read all the instructions before using and installing this product.
- Do not use this product if the power cable or charging cable has any damage.
- Do not use this product if the enclosure or charging connector is broken or open or if there is damage.
- Do not put any tool, material, finger or another body part into the charging or EV connector.
- Do not twist, swing, bend, drop or crush the charging cable. Never drive over it with a vehicle.



WARNING: The product should be installed only by a licensed contractor and/or licensed technician by all building codes, electrical codes and safety standards.



WARNING: A qualified installer should inspect the product before initial use. Under no circumstances will compliance with the information in this manual relieve user of his/her responsibilities.

- Power feed must be 1 or 3 Phase configuration with TN(-S)/TT grounding systems.
- In installing the TN(-S) system, the neutral (N) and the PE of the power distribution are directly connected to the earth. The PE of the charger equipment is directly connected to the PE of power distribution and separate conductor for PE and neutral (N).
- I-ON EVO EV charger should be installed on a flat concrete floor
- I-ON EVO Wall EV charger should be installed on a perfect vertical Wall. Clearly the wall on which the device is fastened must be solid. It must be possible to drill the wall and insert wall plugs and anchor bolts that are suitable for supporting the device's weight.



Charging station classification:

- Permanently connected
- Equipment for locations with no restricted access
- Class I equipment

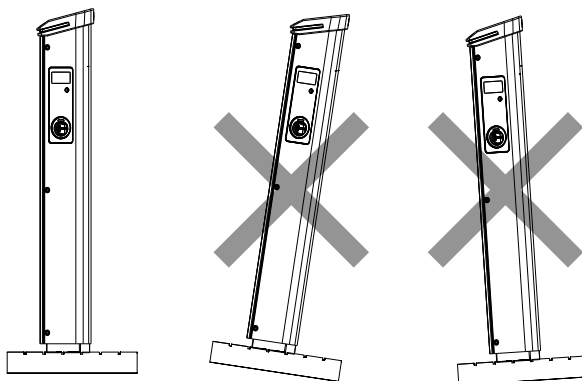
4.2 Environment

Position the charging station in a location that can be accessed for installation and maintenance, which permits its use and:

- The reading of the LED indicators.
- Do not position any material sensitive to high temperatures in the immediate vicinity of its air outlet.
- Avoid corrosive environments that could have an influence on the correct operation of the device.
- It is prohibited to leave any object on the device.
- In the case of connected devices, avoid positioning them near metal fences or walls which could cause signal disturbance problems.

4.3 Support and fixing surface (column version)

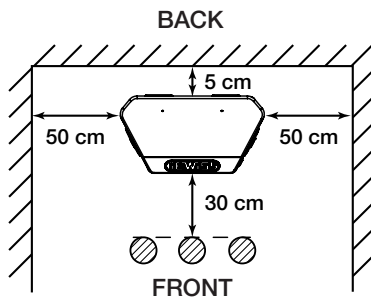
Ensure there is a firm, even surface for anchoring the device, which must be perfectly horizontal.



I-ON EVOLUTION

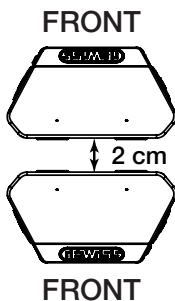
The installation surface must be suitably prepared according to the type of ground, to guarantee that the device is stable during use. You are therefore advised to use the base supplied (column version), fixing it to the ground by means of tie-rods (not supplied) or plugs, or embedded in cement.

Install the charging station in the prepared area, maintaining the necessary distance between it and the surrounding area (as shown in the figure).



The charging column can be installed in back-to-back configuration with another column, to make the best use of the space available.

This particular configuration requires only one power supply line and a single plinth for the installation of two devices, as shown below:



There must be a minimum distance of 2cm between the back panels of the two charging units.

NB: the surface on which the charging station is to be installed must be designed and built in accordance with the standards and the regulations in force, to ensure the safety of users regardless of the type of surface.

4.4 Support and fixing surface (wallbox version)

Ensure that there is a solid and even surface for anchoring the device, which must be perfectly vertical.

The installation surface must be adequately prepared to ensure the stability of the device during use.

We therefore recommend using the supplied kit (wallbox version) or pole mount.

Install the charging station with the necessary distance to allow for multiple installation and insertion of the charging cable.

4.5 Installation area safety requirements

4.5.1 Requirements for workplace conditions

- Set up suitable fencing to isolate the construction area from outside
- Close and secure all entrances when the site is unattended
- Hang warning notices nearby which show the following information: warning icon and phone number of person in charge

4.5.2 Material management suggestions

- Keep work areas (including access ways) free from debris and obstructions
- Keep ground surfaces tidy and flat, to avoid people tripping or being hurt by tools or other objects
- Stack and store equipment and materials in a tidy and stable manner
- Regularly clean up and dispose of waste
- Remove all surplus materials and equipment after completion of work
- Beware of flammable materials and goods. Keep them away from work areas.

4.5.3 Protection against high temperatures on the worksite

- Erect a sunshade or shed to shelter workers from the heat and sun
- Set up cooling equipment, such as exhaust fans
- Make water dispensers available
- Provide suitable protective clothing such as a hat, sunglasses and long sleeves to protect workers from heat stroke and UV rays

4.5.4 Protection against Inclement weather

- Secure all scaffoldings, temporary structures, equipment, and loose materials
- Check and implement SOP to ensure disconnection of gas supplies, electrical circuits and equipment
- Inspect worksites to ensure protection against ingress of water or dust
- Inspect the drainage system for blockages and remove them if found
- Stop all outdoor works except for emergency works

4.5.5 Protection during Lifting operations

- Have lifting gear and apparatus regularly inspected and tested by qualified persons.
- Isolate and cordon off lifting areas to keep out non-construction personnel
- Ensure that lifting routes do not cross buildings or people, and avoid collision with objects
- Do not exceed safe working load limits

4.5.6 Additional requirements For on-site workers

- Plan all work
- Turn off the power (work with live parts de-energized whenever possible)
- LOTO (Lock Out, Tag Out)
- Live electrical work permit (input terminals with HV after door open)
- Use personal protective equipment (PPE)
- Safe workplace conditions and space
- Adhere to other occupational health, safety and security codes, such as those published by OSHA

4.6 Grounding and safety requirements

- The product must be connected to a grounded, metal, permanent wiring system. Connections shall comply with all applicable electrical codes. Recommend the ground resistance be less than 10mΩ.
- Ensure no power is connected at all times when installing, servicing or maintaining the charger.
- Use appropriate protection when connecting to the main power distribution network.
- Use appropriate tools for each task.
- The use of software as controlled means must not be considered as tool that guarantees the protection against electric shock.

1. Requirements for workplace conditions

- Set up suitable fencing to isolate the construction area from outside
- Close and secure all entrances when the site is unattended
- Hang warning notices nearby which show the following information: warning icon and phone number of person in charge
- Install sufficient lighting fixtures



2. Cleaning up

- Keep work areas (including access ways) free from debris and obstructions
- Keep ground surfaces tidy and flat, to avoid people tripping or being hurt by tools or other objects
- Stack and store equipment and materials in a tidy and stable manner
- Regularly clean up and dispose of waste
- Remove all surplus materials and equipment after completion of work



3. Fire hazards

- Beware of flammable materials and goods. Keep them away from work areas.



4. Protection against high temperatures on the worksite

- Erect a sunshade or shed to shelter workers from the heat and sun
- Set up cooling equipment, such as exhaust fans
- Make water dispensers available
- Provide suitable protective clothing such as a hat, sunglasses and long sleeves to protect workers from heat stroke and UV rays



5. Inclement weather

- Secure all scaffoldings, temporary structures, equipment, and loose materials
- Check and implement SOP to ensure disconnection of gas supplies, electrical circuits and equipment
- Inspect worksites to ensure protection against ingress of water or dust
- Inspect the drainage system for blockages and remove them if found
- Stop all outdoor works except for emergency works



6. Lifting operation

- Have lifting gear and apparatus regularly inspected and tested by qualified persons
- Isolate and cordon off lifting areas to keep out non-construction personnel
- Ensure that lifting routes do not cross buildings or people, and avoid collision with objects
- Do not exceed safe working load limits



7. For on-site workers

- Plan all work
- Turn off the power (work with live parts de-energized whenever possible)
- LOTO (Lock Out, Tag Out)
- Live electrical work permit (input terminals with HV after door open)
- Use personal protective equipment (PPE)
- Safe workplace conditions and space
- Adhere to other occupational health, safety and security codes, such as those published by OSHA



8. Reference Standards

Adhere to the following codes:

- NFPA-70E (Electrical Safety in the Workplace, Shock Risk Assessment, Arc Flash Risk Assessment)



5. Device installation and Electrical connection

Before proceeding with device installation, remove the packaging, paying particular attention to not damage the casing.

Make sure there is no condensation inside the packaging. Otherwise, install the device only when it is completely dry.



All the installation operations must be carried out in compliance with the directive in force.



All operations that involve moving large weights must be done by two people.



The connection must only be made by qualified personnel, when the system is disconnected from the power supply.



Scrupulously check that the device is not energized when accessing it inside.



To measure the lack of voltage, use dielectric gloves and safety goggles that are type-approved for electrical risks.



All the installation operations must be carried out respecting the safety regulations and laws in force, and following the instruction manual.

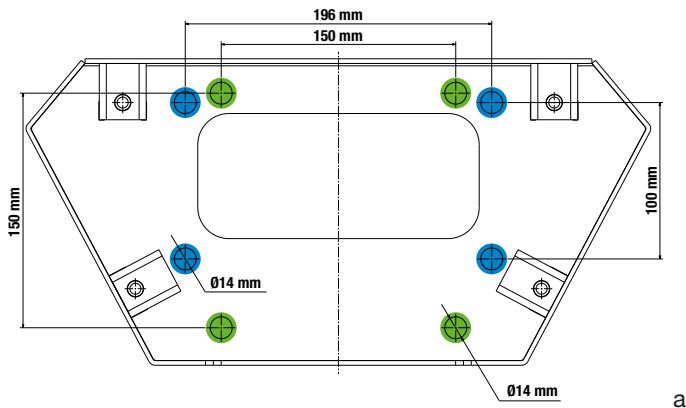
5.1 General installation requirements

- The device must be installed in a suitable environment that satisfies the information described in chapter 4 “Installation prerequisites”. Furthermore, elements used in the rest of the installation must be compatible with the device and compliant with the applicable law.
- The ventilation and work space must be suitable for the maintenance operations according to the directive in force.
- The external connection devices must be suitable and observe the distance established by the directive in force.
- The section of the connection cables must be suitable for the maximum current intensity set on the charging unit.
- Keep external elements away from the air intakes and outlets, as these could prevent correct device ventilation.

5.2 Device installation (column version)

5.2.1 Mechanical installation

- Prepare the assembly area with four tie-rods embedded in the cement (if you are using the fixing plate - accessory GWJ8021 - embed it in the ground). The figure below shows the position of the anchorage point on the device. There are two options for fixing the device in the ground:



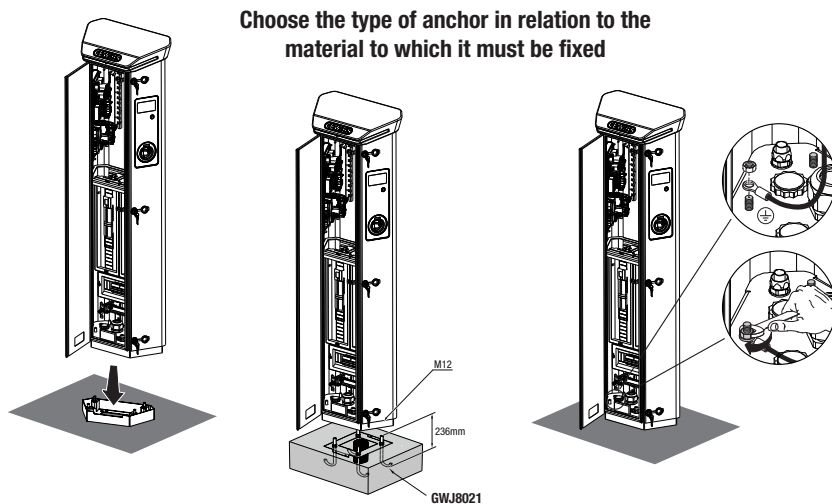
NB: the fixing points highlighted in blue allow this device to be installed in place of the old generation devices.

I-ON EVOLUTION

- These charging stations have a front access door with key opening to facilitate installation and connections. Open the door using the key supplied. The safety key can only be removed when the door is fully closed.
- Couple the fixing base (already fixed to the ground) with the charging station.
- Fix the column on the base, tightening the nuts on the pins indicated in the figure. The maximum tightening torque is 20 Nm.

NB: it's important to complete the earth connection of the base. To do this, insert the eyelet of the earth cable on a fixing pin, then tighten it with the relative nut as shown in the figure.

- Check that the device is correctly fixed in place.
- Remove the protective film from the front panel.



5.2.2 Wiring

The connection must satisfy certain requisites:

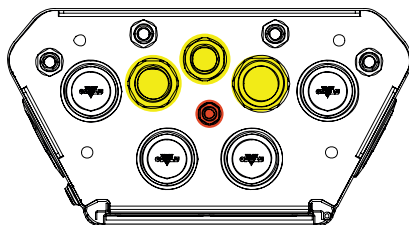
Connection specifications		
Type of connection	Single-phase N/A	Three-phase
Number of wires	2P+E	3P+N+E
Rated current	up to 64A	up to 64A
Maximum wire diameter	1 x 70mm ² (2 x 35mm ²)	

5.2.3 Wiring modes:

- I-ON EVO has been fitted with oversized main power connectors, that can handle cables upto 70mm in diameter. This is done to ease the series connection of 2 or multiple products, avoiding to route big cables through all the stations. Clearly it's important to **keep always in mind the maximum power consumption of the system and route adequate cables.**
- For example the in-out connection can be made for a maximum of 2 columns connected in series, if they are set to deliver the maximum power, wich in this case will be 128A (4 charging points draining 32A each).

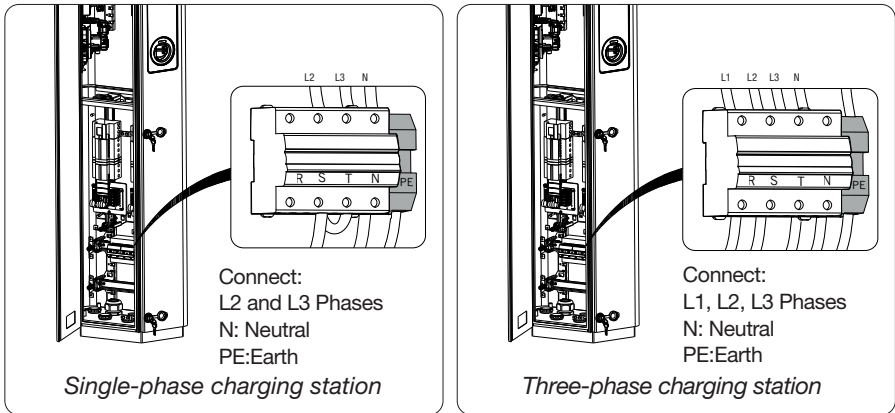
5.3 Connection procedure

- The charging station is wired by connecting a single-phase or three-phase cable inserted in the cable gland. The appropriate cable glands are M50, M40, M32 for the power cables (highlighted in yellow), and M16 for the data cables (highlighted in red).



Depending on the charging unit version, the cable glands and caps supplied are as follows:

Version	Cable glands supplied	Caps supplied
Single-phase 7.4 kW	M40	M32, M50
Three-phase 22 kW	M40	M32, M50



With the help of the figures above, please follow these rules:

- **Single Phase I-ON:**

- As the single-phase versions are fitted with a three-phase magnetothermic circuit breaker for connecting a three-phase line, If the incoming line is single-phase, a U-bolt must be created between the L2 phase and the L3 phase to correctly power the product. After that connect N and PE to the respective sockets.

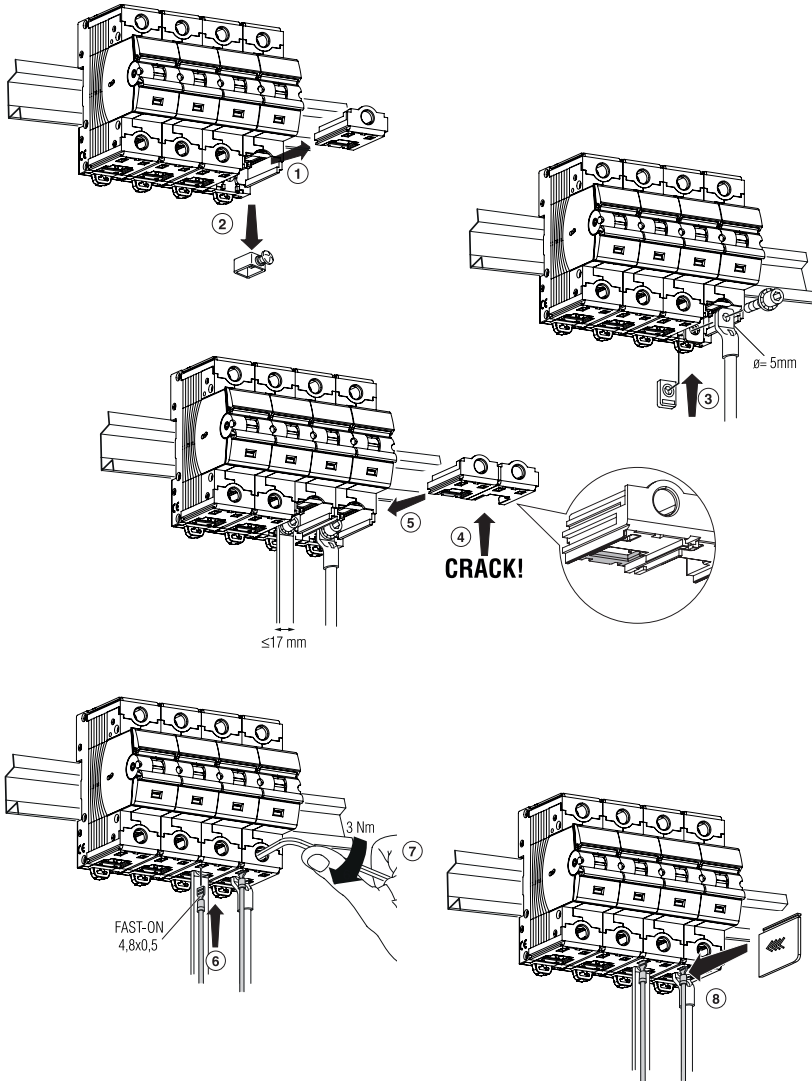
- **Tree Phase I-ON**

- Please connect the station with L1,L2 and L3 phases. After that connect N and PE to the respective sockets.



WARNING: To ensure earth fault protection, installation of PE cable into designated socket IS MANDATORY, GEWISS is not responsible for issues caused by a wrong installation

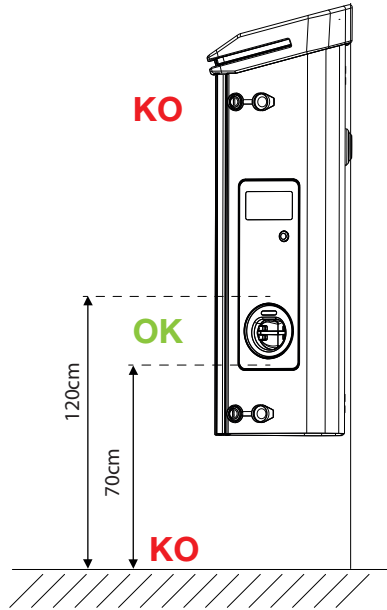
Method for wiring the power supply line using lug



5.4 Device installation (WallBox version)

5.4.1 Mechanical installation

Height installation requirements



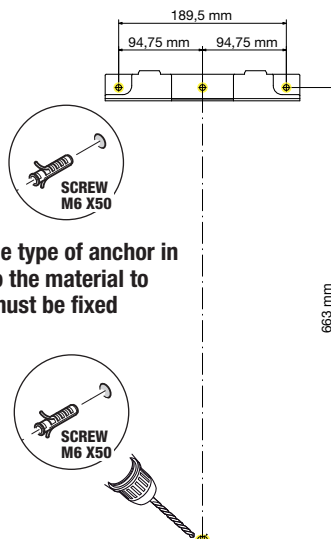
Whatever the type of installation, it's important that the socket-outlet is assembled at a height between **70 and 120cm**.

5.4.2 Product installation on a wall

If the product is to be installed on the wall (using the supplied accessory), the procedure is as follows.

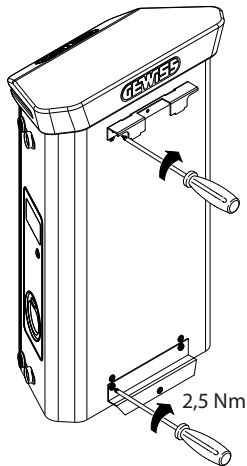


- Prepare the assembly area by fixing the support bracket to the wall, drilling holes with the centre distances shown below:

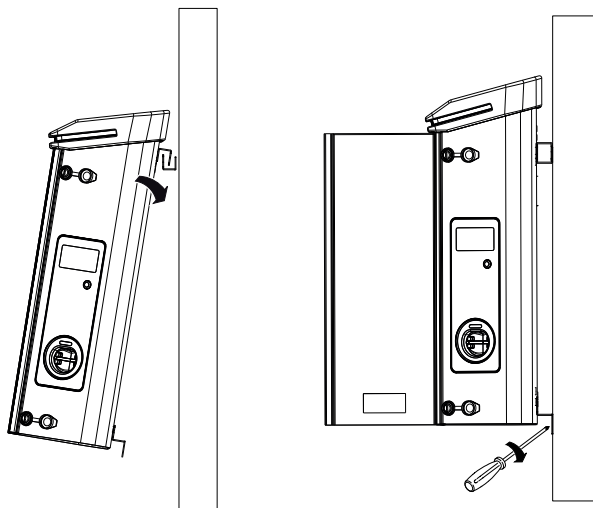


I-ON EVOLUTION

- Assemble the brackets (supplied) on the back plate of the WallBox;



- Assemble the WallBox on the bracket that you have already fixed to the wall. After positioning the product, drill the wall using the lower bracket as your centre point, then tighten the locking screw.

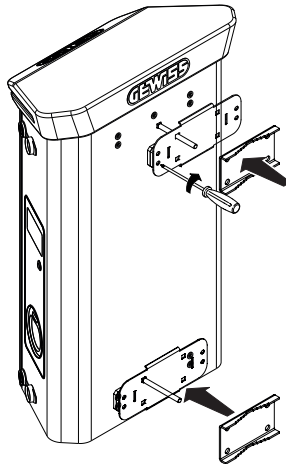


- Check that the device is correctly fixed in place;
- Remove the protective film from the front panel.

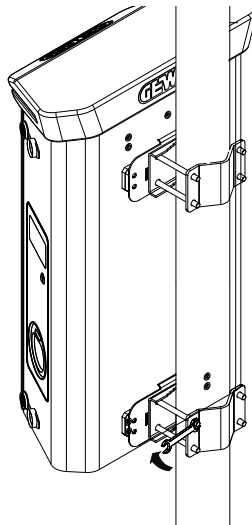
5.4.3 Product installation on a pole:

If the product is to be installed on a pole (using the accessory GW46551), follow this procedure:

- Assemble the support brackets on the back plate of the WallBox, as shown below:



- Position the WallBox on the pole and fix it in place by tightening the locking nuts of the two plates as shown in the figure;



- Check that the device is correctly fixed in place;
- Remove the protective film from the front panel;

5.4.4 Wiring

Wiring requisites

The connection must satisfy certain requisites:

Connection specifications		
Type of connection	Single-phase	Three-phase
Number of wires	2P+E	3P+N+E
Rated current	up to 64A	up to 64A
Maximum wire diameter	1 x 70mm ² (2 x 35mm ²)	

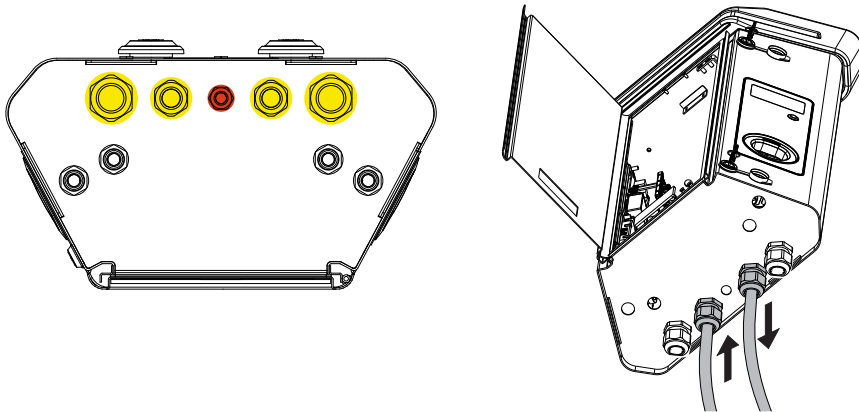
5.4.5 Wiring modes

I-ON EVO has been fitted with oversized main power connectors, that can handle cables up to 70mm in diameter. This is done to ease the series connection of 2 or multiple products, avoiding to route big cables through all the stations. Clearly it's important to **keep always in mind the maximum power consumption of the system and route adequate cables.**

For example the in-out connection can be made for a maximum of 2 columns connected in series if they are set to deliver the maximum power, which in this case will be 128A (4 charging points draining 32A each).

Connection procedure:

To make the electrical connection, insert the power supply cables in the device. The charging station is wired by connecting the single-phase or three-phase cables inserted in the cable glands. The appropriate cable glands are M25 and M32 for the power cables (highlighted in yellow), and M16 for the data cables (highlighted in red).



Depending on the charging unit version, the cable glands and caps supplied are as follows:

Version	Cable glands supplied	Caps supplied
Single-phase 7.4 kW	2x M25	2x M32
Three-phase 22 kW	2x M32	2x M25

Please follow these rules:

I-ON EVOWallbox and Column main power wiring rules are the same, so for graphic reference please check paragraph 5.3.

- **Single Phase I-ON:**

- As the single-phase versions are fitted with a three-phase magnetothermic circuit breaker for connecting a three-phase line, If the incoming line is single-phase, a U-bolt must be created between the L2 phase and the L3 phase to correctly power the product. After that connect N and PE to the respective sockets.

- **Tree Phase I-ON**

- Please connect the station with L1,L2 and L3 phases. After that connect N and PE to the respective sockets.

5.5 Phase rotation

Phase rotation is a key practice for balancing the electrical load in multiple charging station installations. This process distributes the load between the three phases of the three-phase system to optimise energy efficiency and ensure the stability of the electrical system

Procedure:

- 1) **Phase identification:** in a three-phase system, identify the three phases as L1, L2 and L3.
- 2) **Connecting the First Charging Station:** connect the first charging station to phases L1, L2 and L3 in standard order.
- 3) **Connecting Subsequent Stations:** for the second charging station, rotate the phases so that the connections are L2, L3 and L1.
For the third charging station, rotate the phases again so that the connections are L3, L1 and L2.

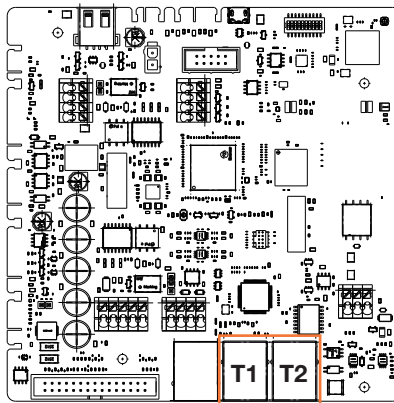
Continue to rotate the phases for each new charging station installed.

6. Multi CP system installation

6.1 Introduction

With the installation of a DLM MultiCP system, up to 30 charging points can be managed, maximizing the use of available energy, avoiding overloads and allowing simultaneous charging of several vehicles. It is based on a Server/Client logic. The server station manages the Client stations.

Communication between the stations is via Ethernet cable, using the dual ports on the Joinon EVO MultiCP motherboard if necessary.



6.2 I-ON EVO specific characteristics

ION evo are made in a way that each charging point is an autonomous integrated system, increasing reliability, where in case of some malfunction of one of the 2 charging points, the other may keep working without issues.

For this reason the **maximum number of ION evo devices that can be connected into a MultiCP system is 15**: 1 system as a server and 29 as clients.

To ease MultiCP installations, the 2 systems in the same I-ON EVO are connected by an ethernet cable by factory.

6.3 Connection between charging points

To allow for greater flexibility and ease of installation, the feature is designed to work with 2 different system topologies, which can be selected by the customer according to their needs.



NB: All solutions must use at least one Ethernet cable at least CAT5 with a maximum length of 100m.

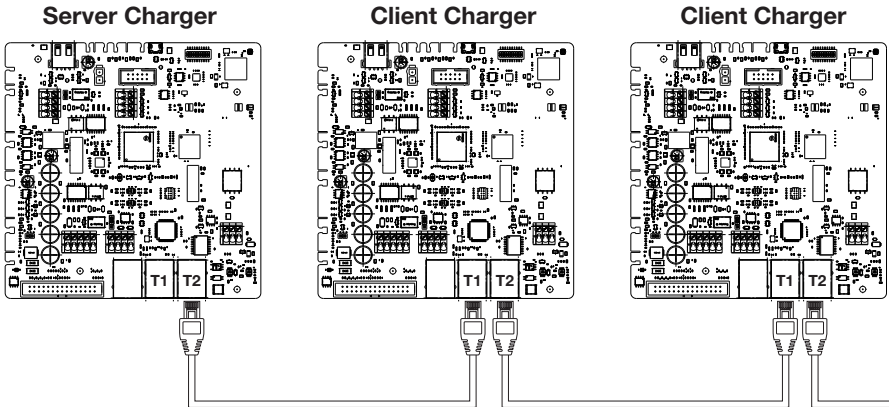


WARNING: You cannot install more than one server station on the same local network! This leads to the non-functioning of the installation.

6.4 Topology 1: “Daisy Chain”

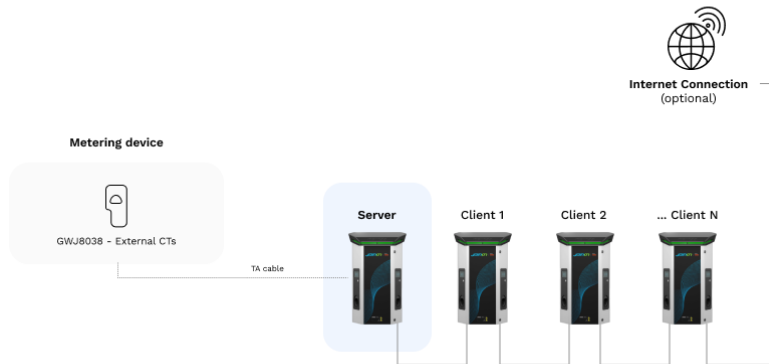
Description of the system

This topology uses both motherboard Ethernet ports. The installer will connect the charging stations in series, following a pattern similar to the image below.



This should result in a plant structure similar to the one shown in the figure:

Daisy chain configuration



The daisy chain link between 2 systems in the same ION is already done internally during product manufacturing.



NB: Please remember that for EACH I-ON EVO there are TWO charging systems. The “server” charger will be only one side of a selected ION, and it will manage other charging systems in all the plant, which will be set as “Clients”.

Specific characteristics

This configuration allows for easy connection between stations, without the addition of external devices and with a reduced use of Ethernet cable.

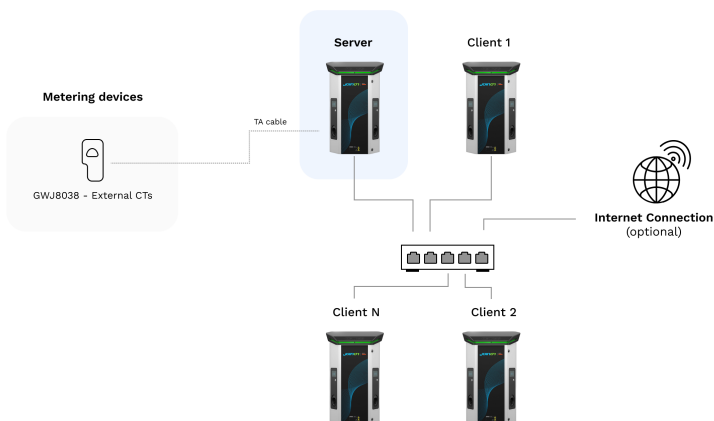
Clearly, with this topology, the system is susceptible to any failure of a client station or deterioration of the Ethernet cable, which would lead to the disconnection of all downstream stations.

6.5 Topology 2: star connection

Description of the system

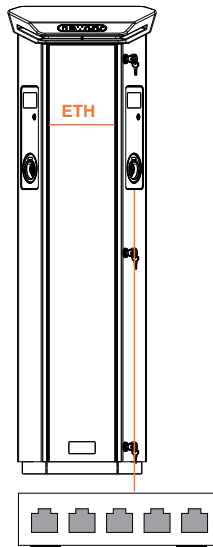
This topology is designed to achieve a “centralized” link between the various stations. In this case, the installer selects one of the available ethernet port in one of the 2 sides of I-ON EVO and connects it to an Ethernet switch. Clearly, the availability of switch ports will need to be appropriate for the number of stations to be connected. When the installation is complete, the system should have a pattern similar to this:

Star configuration



NB: Please remember that for EACH I-ON EVO there are TWO charging systems. The “server” charger will be only one side of a selected ION, and it will manage other charging systems in all the plant, which will be set as “Clients”

For reference, the correct link should be done in this way, the internal cable is already installed:



Specific characteristics

This type of connection, while more complex and expensive at the level of external devices to buy and cable to lay, ensures the highest level of robustness of the connection between stations. This is because if one I-ON EVOset with both sides as “clients” fails, the functionality of the other stations will not be affected.

6.6 Connection of metering devices

The installation of an external measurement device, capable of providing the Server Station with information about the system’s consumption, is essential for the use of the load balancing functionality.

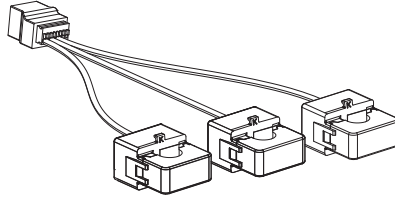
Currently I-ON EVO MultiCP allows a specific kit of sensors to be fitted.

Gewiss **CT sensors** connected to the server station

- GWJ8037: for SINGLE-PHASE systems
- GWJ8038 for THREE-PHASE systems

Gewiss CT sensors

This solution is compatible with installations with a current rating of less than 100A.



The devices should be connected directly to the designated SERVER station, following the instructions in the KIT. The positioning of the same inside the system is crucial. Follow the instructions in the following paragraphs for correct installation.

6.7 External sensor positioning instructions

For the system to function correctly, the Server station must be able to obtain, from an external sensor, consumption data for the entire installation where the series of charging points is installed. This is essential to be able to calculate the energy available for charging and to determine the behavior of all charging points.

Therefore, the sensors must always be installed upstream of the installation. Commonly, correct positioning is achieved by locating your energy supplier's meter and placing the sensors just after.

Clearly, should the station system have a certain amount of fixed dedicated power, not shared with other loads, the TA sensors should be installed upstream of the dedicated line.



NB: Even if you have a line dedicated to the charging system with constant available power, you still need to install the metering device for the functionality to work properly.

7. Functional Specification

I-ON EVO offers several versions, with slight differences in the internal components, depending on your needs.

7.1 Basic functions

I-ON EVO allows you to choose between basically 2 main operating modes:

- **STANDARD:** the station will charge the vehicle to a fixed default maximum power, in this case no load balancing dynamics are required.
- **DYNAMIC MultiCP:** The charging power can vary, allowing the total available power to be split between multiple I-ON EVO stations, so that multiple vehicles can be charged at the same time.

7.2 Dynamic MultiCP Mode

With the installation of a DLM MultiCP system, up to 30 charging points can be managed, maximizing the use of available energy, avoiding overloads, and allowing simultaneous charging of several vehicles.

Communication is via a Server-Client logic, where the Server station manages the Clients connected to the system.

The Server station also reads the power data of the system from an external meter, which is essential for calculating the energy balance between external loads and charging stations.

The operating principle is currently based on balanced logic. The energy available for charging is divided equally between the active sessions. In the event of a reduction in power availability, the Server station suspends the last charging session started, allowing previously started sessions to be terminated. As power availability increases, suspended sessions are restarted.

The system measures the consumption of the system, adapting the charging power accordingly, for the most precise adjustment possible.

7.3 Language button

The charging point has a language button on each side.

You can press it and select the right language before to start a charge.

It's important to notice that the user can't change the language during the charge sessions process because this function is disabled.



8. How to Charge Your Electric Vehicle



WARNING: Vehicle adaptors shall not be used to connect a vehicle connector to vehicle inlet.



WARNING: Adaptors between the EV socket-outlet and the EV plug shall only be used if specifically designated and approved by the vehicle manufacturer or by the EV supply equipment manufacturer and by national requirements.

I-ON EVO offers an easy way to charge an electric vehicle.

By default, I-ON EVO requires authorisation to begin a charging session, and this can be done in 2 ways:

- Via RFID enabled card (only for models with RFID reader)
- Via an OCPP platform

Finally, it is also possible to set the station to “Autostart” mode, so that charging starts as soon as the connector is inserted into the car.

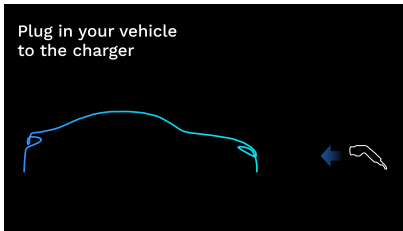
The onboard LCD will display indications and session informations during all the charging session. Please follow the next sections for more info on display behavior.

8.1 Autostart

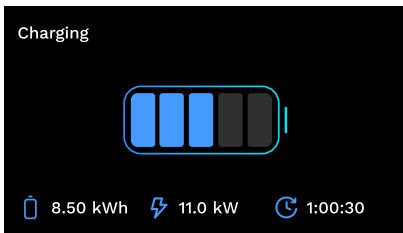


NOTE: The autostart process method must be set on the web portal available on the charger

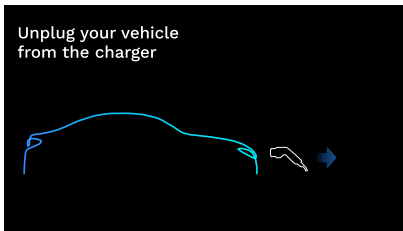
In this case the user doesn't need of any kind of identification. This image will be displayed on the I-ON EVO screen:



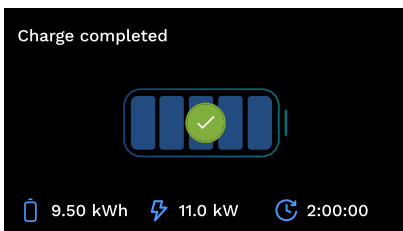
You have to plug the EV charging cable into the socket (or the tethered cable into your EV) and the charger will automatically lock it and start the charge.



During the process you can see information about the time, actual charge power and total charged energy.



I-ON EVO will wait for user disconnection of the cable from the car and after that it will eventually unlock the socket.



Once the cable is disconnected I-ON EVO will display a charge recap.

8.2 RFID reader

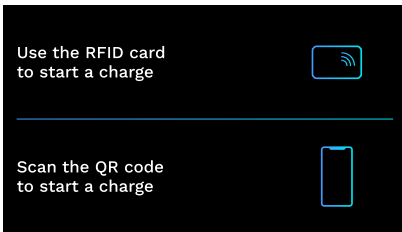
I-ON EVO is equipped with an internal RFID reader and the identification of the user can be carried out using an RFID tag. Usable RFID tags must comply with IEC 14443 A/B.

I-ON EVO enables RFID tag registration and management in 2 modes:

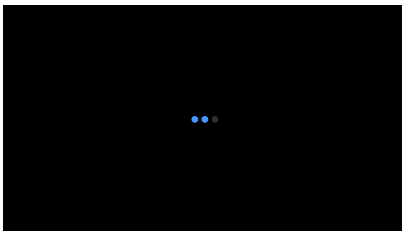
- **Via the OCPP platform to which the station is connected**
- **Locally, with the addition directly from the tag on-board Portal.**

When the end-user scrolls through the RFID tags, I-ON EVO reads the tag and check if it is authorized to start charging. If the RFID tag is accepted, the charging session can begin. If it is not accepted, I-ON EVO displays an error and the colour of the LED is RED blocking any charging session.

The display will behave as follows:

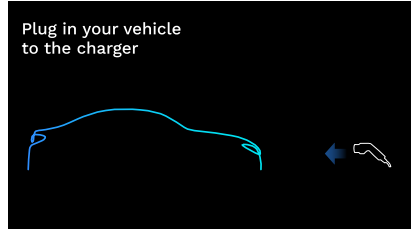
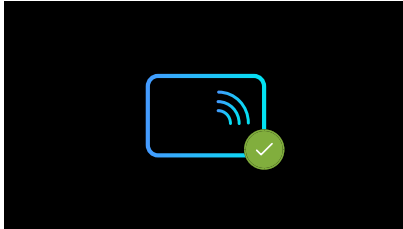


This image will be displayed on the I-ON EVO screen, asking you to pass the card or scan the QRcode.

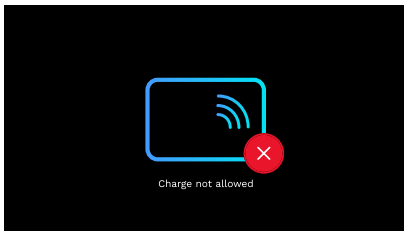


Pass your card near the card icon on I-ON EVO to start the identification process.

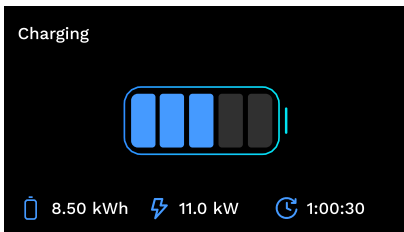
If the card is accepted, you will see the following blinking screen and subsequently the charger will unlock the socket and wait for plug:



You must plug the EV charging cable into the socket and the charger will automatically lock it and start the charge. For the versions with tethered cable only plug the cable on your EV port.



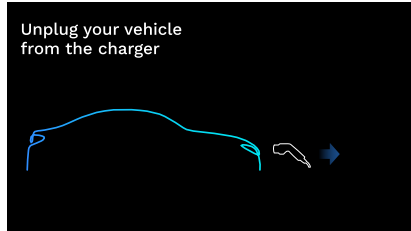
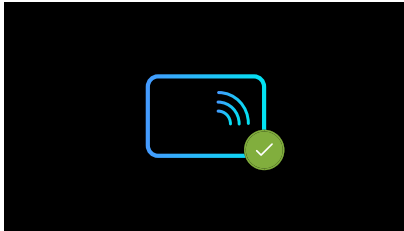
If the card is rejected you will see this error screen and the charger will return first image.



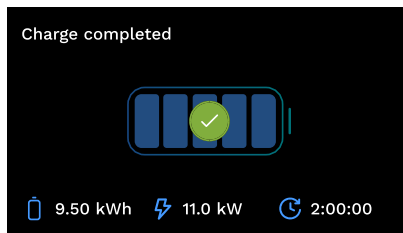
During the process you can see information about the time, actual charge power and total charged energy

I-ON EVOLUTION

If you want to stop charging or when the charge is finished you have pass your RFID card to unlock the socket. If recognized the socket will be unlocked and you will be prompt to unplug the cable:



Once the cable is disconnected I-ON EVO will display a charge recap:



9. Charger setting from the On-Board portal

I-ON EVO is equipped with a local web portal from which you can modify all the station configuration parameters and also read the logs for debugging any abnormal situations. As previously mentioned, I-ON EVO is composed by 2 different autonomous systems, so each side has its own specific onboard portal.

9.1 Accessing the On-board Portal

To access the On-board Portal, you must first connect to the same network as the charging station.

This can be done in 2 ways:

- By connecting to the Wi-Fi hotspot of the individual station, identifying the SSID and password on the label provided in the box. To help identification, there is also the reference to the side's serial number.

Wi - Fi Network:
GWJ3604T_50411C39D8FE
Wi - Fi Password:
MGQONDRhZG
Serial Number: G2524300010

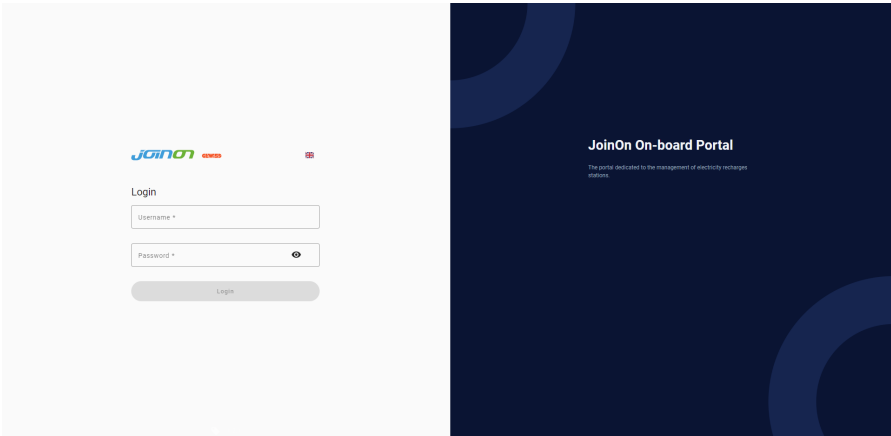
- By connecting to the same Wi-Fi / Ethernet network to which the station is connected.

Once connected to the station, the On-board Portal can be reached at the following address:

https://WIFI_HOTSPOT_SSID.local:8080

For example: https://GWJ3702C_50411C39CD16.local:8080

If the address is correct, a login page should open, where you should enter:



Username: Installer

Password: WIFI_HOTSPOT_PSW

Both WIFI_HOTSPOT_SSID and WIFI_HOTSPOT_PSW are easily found on the label provided in the box for each station.

9.2 Basic structure of the On-board Portal

Once you have successfully logged in, the On-board Portal will be divided into 4 macro sections:

- **Configuration**
- **Logs**
- **Charging log**
- **RFID**

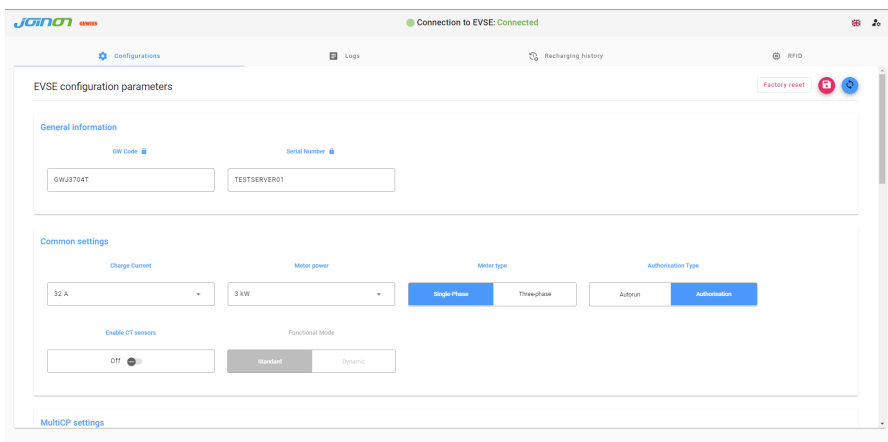
Below is an overview of the individual sections.

9.3 Configuration section

- **General information:** Information about the station
- **Common settings:** Important and often necessary parameters for the installation of products.
- **MultiCP settings:** Parameters specific to MultiCP stations, including those required to manage the DLM
- **Other settings:** Additional parameters for specific features that are not relevant
- **Network settings:** Parameters required to configure the Internet network via Wi-Fi or Ethernet.
- **Ocpp:** OCPP setting parameters
- **Regional settings:** Parameters required for models designed for specific regions (e.g. UK or FR). Users will have to save the settings with the save button at the top right and reload the page with the refresh button
- **ION settings:** Specific parameters for ION products

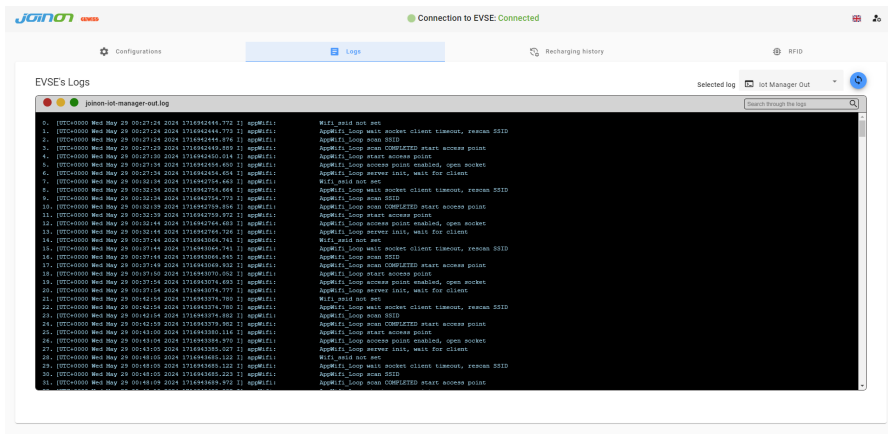


NOTE: The On-board Portal is programmed to show no parameters that are not available for the specific charging station model.



9.4 Logs section

In this section, installers and service personnel will have easy access to the logs of the charging station. At the top right you can select the log file to read and refresh manually to view the new logged lines. When the portal is opened, the platform communication management log is shown, which is often the most useful for initial debugging.



I-ON EVOLUTION

In selecting the files to be read, you can see that some will have a suffix with a number (.1, .2 ...). This is normal, as the station has a 5-day log retention capability. The prefix means how many days ago the log refers to. For instance, an: iot Manager Out 5 should be opened if you want to read the logs from 5 days before. After 5 days, the logs are placed in a zip file that is saved to the cloud and then deleted locally.

In addition, files with the suffix err are logs with only any serious errors in the execution of the specific function. Follow the table below to find which file to open and view to get the information you need :

Log name	Function	Brief description	Comment
joinon-authentication-manager	RFID authentication	RFID tag management	
joinon-configuration-manager	Configuration	Any new saved configuration is logged, whether it is timerange, restoring default values, etc.	
joinon-current-manager	Current management data	Any change in current parameter is logged, e.g. during DLM operation	
joinon-eol-manager	END of Line commands	The receipt/sending of EOL commands between the station and the test machine is logged	
joinon-evse-fsm	Status machine	The changes between the different charging statuses, the sending/receiving of the contactor and socket status are logged.	
joinon-ev-state-manager	Status of communication between station and EV	Status changes of the CP and contactors are logged.	
joinon-iot-manager	CLOUD connectivity and communication management	A heavily populated log, any change in station status is tracked if communicated to the cloud. Also, all connectivity statuses/errors are marked in this file.	Very useful for general debugging of many issues. It is suggested that you always start here to analyse any problems and then investigate them by opening the specific logs.

joinon-led-manager	RGB LED management	Each colour change and animation of the LED is marked	
joinon-meter	Metering	Log of the energy values read by the internal or external meter (MID/TIC).	
joinon-socket-manager	Socket management	All changes in status of the charging socket are logged as well as the receipt of change commands.	
Joinon-watchdog-manager	Watchdog	Any service restarts triggered by the Watchdog are logged.	

9.5 Charging log section

This section displays basic data about the charging sessions started on the product.

9.6 RFID section

In this section, the installer can manage the RFID tags saved locally on the station. There is a function for importing tags using a CSV file. It is important to note that in the case of connected stations, as specified in the previous chapters, the tags must be managed either by JoinON small net or by the OCPP platform chosen by the customer.

UID	Alias	Status
52118F18	Card1	true
5208BC18	Card2	true

10. I-ON EVO Configuration as a single station

I-ON EVO is designed to be installed in systems with multiple interconnected stations. However if a load management is not necessary, you can easily setup I-ON EVO as a standalone station.

10.1 Step 1: Operating parameter setting

Once the station has been started, proceed and access the On-board Portal to set, as required:

- **Meter type:** whether single- or three-phase
- **Meter power:** the maximum power available in your system
- **Charging current:** please consider that in I-ON EVO you have 2 sides, so to make them charge at maximum power you have to have double the power available. If it is less, it's important to set the correct amount of current on each side, according to your limits.
- **Functional mode:**
 - **Standard:** the station will charge at a fixed power level
- **Authorisation type:** choose between:
 - **Autorun:** the charging session will start as soon as the cable is plugged in.
 - **Authorisation:** You will need to enable charging using the APP or RFID card of the JoinON small net or the chosen OCPP platform.

When setup is complete, press the “save” button at the top right and, unless already prompted by the portal, proceed to restart the station.

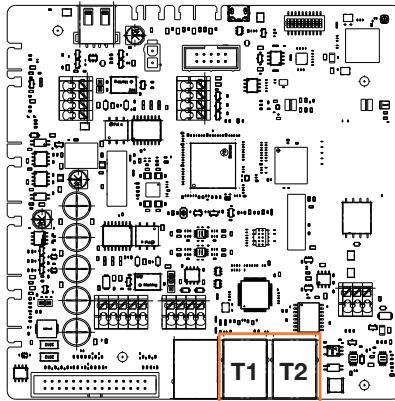
Please remember that as I-ON EVO is made by 2 autonomous sides, you have to repeat this setup process for each side

10.2 Step 2: Internet Network Setup

I-ON EVO allows connection to the Internet choosing between Ethernet or Wi-Fi connection.

10.2.1 Ethernet connection setup

If your plan is to connect I-ON EVO to an ethernet network, the process is straightforward. As the two sides of the charger are already connected by factory with an ethernet cable, you can easily connect both sides by linking your network cable to one of the two (1 for each side) free ethernet ports on the side motherboard. After that please reboot I-ON EVO from the main circuit breaker in the bottom.

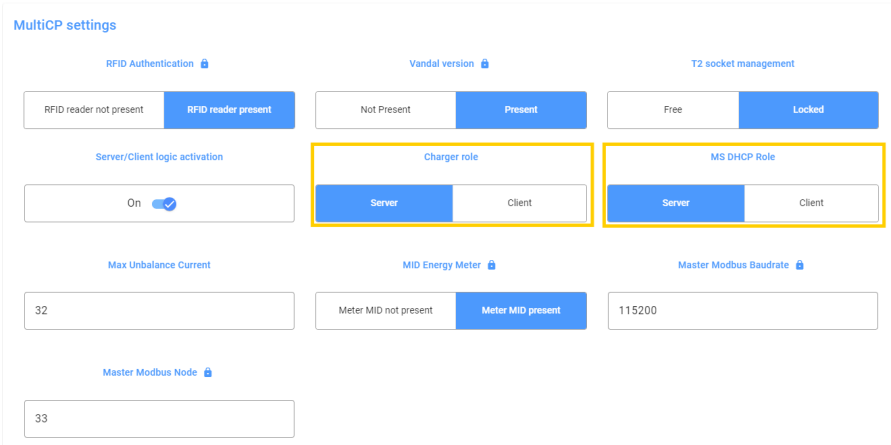


10.2.2 Wi-Fi connection setup

I-ON EVO has a feature that allow one station to connect to Wi-Fi, and share the connection to the other side, without any additional configuration. This is possible because the “Server” side will act as a local DHCP server for the other side.

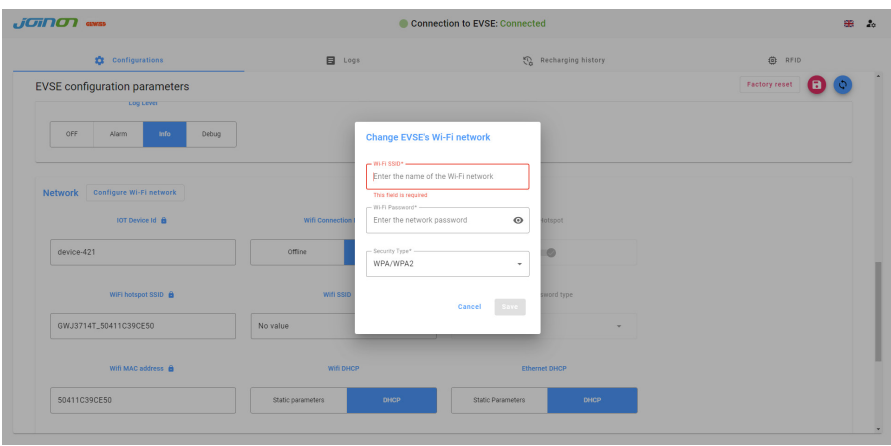
To set it up, please follow the steps below:

1. Select side of the I-ON EVO and connect to its onboard portal using its personal hotspot
2. find the section “MultiCP settings” and set as follows
 - Charger role: “Server”
 - MS DHCP role: “Server”



Save the parameters by selecting the red button in upper right corner. The side will reboot

3. Reconnect to the same side on-board portal and find the “network” section and click on “configure Wi-Fi network”. A window opens asking for network parameters (SSID, Password, and Security). Once entered, click on “save”. The station closes the hotspot and connects to the selected network. If the data is correct, you will see a white blink on LED. If there is something wrong, the side will blink red and the local Wi-Fi hotspot will be opened. Please reconnect to the hotspot, correct the Wi-Fi data and retry.



Clearly, if the data entered is correct you will need to connect to the new network you just set up to access the on-board portal again.

4. To finish setup, please reboot both sides by opening the main circuit breaker on the bottom. After that, both sides should be connected to the internet through Wi-Fi.



WARNING: Enabling this function involves the creation of a local network between stations. To access the On-board Portal of the individual stations, you must connect a PC to the same local network, by connecting to a free Ethernet port of a station or to the Wi-Fi hotspots of each station, which will still be active.



WARNING: Gewiss is not responsible for problems resulting from poor Wi-Fi connections. Before installing I-ON EVO, ensure that the area has adequate Wi-Fi signal coverage. A strong signal is needed for best performance, especially when there are a large number of Client stations



WARNING: Gewiss suggests the use of a Wi-Fi network with an appropriate level of security, such as WPA-WPA2-Personal, and avoid public networks with no level of security.

11. DLM MultiCP: server configuration

11.1 Introduction

As previously described, I-ON EVO is composed by 2 autonomous sides, connected by an ethernet cable to allow communication between them. In the configuration of a MultiCP system you must select a side of one of I-ON EVO charger you are going to install that will be configured as the Server of the system. All the metering devices must be connected to the Server side. All the other charging points in the system of multiple I-ONs will be configured as Clients.



INFO: Before proceeding to the next step, make sure to have properly read and understood the connection topologies at chapter 6.

11.2 First steps

After the installation and connection of the stations, the connection of the external meter, you first need to proceed with the configuration of the station that will assume the role of Server.



INFO: For more effective configuration, we recommend that you always start with the Server station configuration.

Access the station On-board Portal as described in the previous paragraphs (9.1) and proceed with configuration

11.2.1 Step 1: MultiCP specific parameter setting

In order for the DLM to function correctly, there are some basic parameters that need to be set up for the server side to perform its task.

From the On-board Portal, identify the “MultiCP Settings” section and proceed with the setting:

- **Role of the charging station**

→ Select “Server”

- **Enabling of metering device**

Depending on the chosen device, enable

→ CT: From the “Common settings” section, activate the “Enable CT sensors” switch



WARNING: Non-activation or incorrect setting of the external metering device will lead to errors or malfunction of the DLM!

11.2.2 Step 2: Basic parameter setting

From the On-board Portal, identify “Common parameters” section, and set:

- **Meter type:**

→ whether single- or three-phase

- **Meter power**

→ In this case, you need to set the available power of the entire system to be monitored and operated by the installed sensors.



WARNING: Incorrect setting of this parameter could lead to malfunctions or overloads of the system.

- **Phase rotation**

- Please select the phase order you wired the charger, as indicated at paragraph 5.5

- **functional mode:**

- select “Dynamic” to enable the DLM algorithm

- **Authorisation type:** choose from:

- **Autorun:** the charging session will start as soon as the cable is plugged in.

- **Authorisation:** You will need to enable charging using the APP or RFID card of the JOINON Cloud or the chosen OCPP platform.

Save the settings using the save key at the top right and wait for the station to restart.

11.2.3 Step3: Internet connection setup

I-ON EVO allows connection to an Internet network via Wi-Fi or Ethernet, to unlock all advanced monitoring and platform connection functions. It is important to set the DHCP behaviour of the Server station, which allows 2 operating modes:

- Direct connection to an available Ethernet network
- Shared Wi-Fi: Server side will act as DHCP server for Clients charging points and will enable, when configured, Internet connection to set one mode or the other, follow the instructions below.

11.2.4 Ethernet connection setup

As previously described, I-ON EVO evo is composed of 2 autonomous sides, connected each other with an ethernet cable. To connect them to an Ethernet network, please select the free port in one of the 2 sides and connect your Ethernet cable. Both sides will automatically connect to the network.

If the connection fails, please try rebooting both sides with the main circuit breaker on the bottom.

11.2.5 Local Server/Client DHCP setting

I-ON EVO has a feature that allow one station to connect to Wi-Fi, and share the connection to the other side, without any additional configuration. This is possible because the “Server” side will act as a local DHCP server for the other side.

To set it up, please follow the steps at chapter 10.2.2 to enable the functionality

The steps at chapter 10.2.2 are intended to enable connection to both sides of a single I-ON EVO. After the correct setup of the I-ON EVO with the side designated as “Server”, all the other Client charging points will automatically connect to the network created by the Server at the first power on.

11.3 DLM MultiCP: Clients configuration

This section is related to the setup of remaining charging points of I-ONs that are designated as “Clients”.

Once the device is installed and powered, log into the On-board Portal using the methods showed in previous chapters and proceed with the setting.

11.3.1 Step 1: Common parameter setting

From the On-board Portal, “Common parameters” section, set

- **Phase rotation**
 - Please select the phase order you wired the charger, as indicated at paragraph 5.5
- **functional mode:**
 - select “Dynamic” to enable the DLM algorithm
- **Charging authorisation:** choose from:
 - Autorun: the charging session will start as soon as the cable is plugged in.
 - Authorisation: You will need to enable charging using the APP or RFID tag.

Press the “save” button at the top right, which restarts the station.

At the next start, if everything is correct, the Client charging point should begin to communicate with the Server, this is confirmed by the fixed or flashing green LED.

12. UK Market additional requirements

In the UK, electric vehicle supply equipment (EVSE) must adhere to strict regulatory requirements to ensure safety, particularly in situations where a Protective Earth and Neutral (PEN) conductor fault occurs. According to the IET Wiring Regulations (BS 7671:2018), specifically Regulation 543.3.3.101(ii), in a TN-C-S (Protective Multiple Earthing) system, a PEN conductor fault can result in the potential for dangerous voltages to appear on exposed conductive parts, increasing the risk of electric shock.

To mitigate this risk, EV chargers, such as I-CON, are required to incorporate PEN fault detection mechanisms. When a PEN fault is detected, the EVSE must immediately disconnect from both the live and protective earth (PE) conductors to prevent the possibility of dangerous touch voltages being present. This safety mechanism is essential because, in a TN-C-S system, the connection between PE and Neutral can cause the protective earth to carry voltage in the event of a fault.

The I-CON solution complies with these regulations by automatically detecting a PEN fault and interrupting the charging session without requiring configuration by the customer. The system remains in an error state until manually reset, ensuring that the charger cannot be re-energized until the fault condition is cleared. This approach ensures compliance with BS 7671 and provides critical protection against electrical hazards in the UK market, where PEN faults pose a unique risk due to the widespread use of TN-C-S systems



WARNING: I-ON cannot recognize whether the problem on the grid is resolved, so the customer must check the situation with an installer and only restart I-ON if the problem has disappeared.



WARNING: To ensure PEN fault protection, installation of PE cable into designated terminal block IS MANDATORY, GEWISS is not responsible for issues caused by a wrong installation.

13. Error encoding and troubleshooting

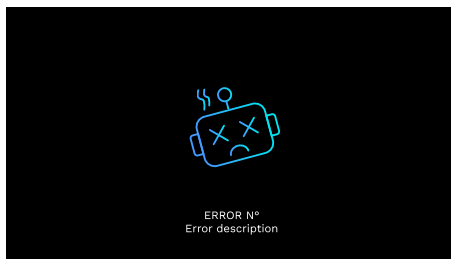
13.1 Error code list

Here is the list of the error that I-ON EVO can generate.



WARNING: The operations described in this manual may only be performed by duly qualified personnel. When this manual refers to qualified personnel, this means personnel complying with all the standards, directives and laws concerning safety, as applicable to the installation and operation of this device. The selection of qualified personnel is always the responsibility of the company that carries out the work, which is the only party that can decide whether a worker can do a certain job, thereby ensuring their safety and respecting the applicable law with regards safety in the workplace. These companies must provide suitable training regarding the electrical devices for their personnel, and make sure they become familiar with the content of this manual.

In case of an error, I-ON EVO display will show this screen with the number of the error with also a short description:



Error no. Code	Error title	Short Description
1	DOOR OPEN	The front panel is open. The product is not safe.
4	CONTACTOR (T2) NOK	The contactor is in a different status than expected.
5	SHUTTERS T2 NOK	The shutters are in a different status than expected.

6	MOTOR BLOCK CLOSED NOK	The shutters are in a different status than expected.
7	MOTOR BLOCK OPEN NOK	The motor block system does not move to the CLOSED position.
8	ENERGY METER COMMUNICATION NOK	Modbus with energy meter communication fault. The errors is activated after 3 incorrect readings. After 1 correct reading, the error is removed.
9	INCORRECT CABLE SIZE	Cable size not present in the EV simulator.
10	OFFLINE >1h	The EVSE lost communication with the backend for 1 hour. The EVSE is connected to the Wi-Fi but cannot connect to the cloud.
11	CONTACTOR (SCHUKO) NOK	The contactor is in a different status than expected.
12	MCB (SCHUKO) NOK	The MCB is open, interrupting the electrical power supply.
13	DC CURRENT	The device recognises DC during the charging current.
14	CP SIGNAL NOK	There is a CP signal error.
15	EV DIODE FAULT	The EVSE check on the diode has failed.
20	PEN FAULT	The EVSE has detected a fault in the PEN system.
22	ADC COMMUNICATION FAULT	If an error occurs after the internal ADC configuration is complete.
24	INPUT POWER SUPPLY NOK	The input voltage is out of range.
25	ETH PORT NOK	Error detected in the Ethernet port, if the LAN interface is in an error state or if the client cannot communicate with the master (over ION).
26	WIFI NOK	Error detected in the Wi-Fi chip.
27	EXTERNAL CT NOK	The external CT devices have broken.
28	EV OVERLOAD	The EV does not respect the current limits.
29	CHARGING SUSPENDED - VENTILATION NOT WORKING	The EV requires ventilation, but EVSE has no related signal (to the ventilation system).

I-ON EVOLUTION

31	UNDERVOLTAGE	The input voltage is low.
32	DC LEAKAGE FAULT	The device checks this error state at start-up of the EVSE.
33	IoT PROBLEM	The device does not receive a response for transaction initiation messages that have been sent.
34	TIC COMMUNICATION	The EVSE does not receive any communication packets from the ICT device. If no correct packet is received after 30 seconds, the error is activated.
35	OTA DECRYPT ERROR	Error updating OTA
36	OTA CHECKSUM ERROR	Error updating OTA
37	S/C SERVER COMMUNICATION ERROR	The Client station has lost connection to the Server station.
38	GROUPING OCPP CLIENT	The EVSE with grouping OCPP active with slave role receive and error on connection with the master
39	S/C ERROR: COMMUNICATION WITH METER	The Server station has lost communication with the external metering device for more than 60s
40	UNAUTHORISED OFFLINE CHARGING	The station is offline and is set to not authorise charging until it comes back online

13.2 Troubleshooting for the installer

When an error occurs on the I-ON EVO, the user may try to eliminate it following these steps.

Error no. Code	Error title	Short Description
1	DOOR OPEN	Check the condition of the cover. If it is open, close it. When closing the cover, make sure that the internal device is pressed down. If the error persists, contact support.
4	CONTACTOR (T2) NOK	Try to start another charging session. If the error persists, contact support.

5	SHUTTERS T2 NOK	Check the condition of the plugs of the T2 sockets. If they are opened without a plug, try moving them with the tool. If the error persists, contact support. If this error occurs while I-ON EVO is charging, remove the plug. The shutter is closed mechanically. The error disappears. If the error persists, contact support.
6	MOTOR BLOCK CLOSED NOK	Try to start another charging session. If the error persists, contact support.
7	MOTOR BLOCK OPEN NOK	Try to start another charging session. If the error persists, contact support.
8	ENERGY METER COMMUNICATION NOK	If the error persists, contact support.
9	INCORRECT CABLE SIZE	Try to start another charging session with the same cable or use a different cable. If the error persists, contact support.
10	OFFLINE >1h	Check the Internet connection provided to I-ON EVO. Check the connection parameters on I-ON EVO. If the error persists, contact support.
11	CONTACTOR (SCHUKO) NOK	Try to start another charging session. If the error persists, contact support.
12	MCB (SCHUKO) NOK	If the error persists, contact support.
13	DC CURRENT	Remove the plug and start another charging session. Try to start charging with another EV. If the error persists, contact support.
14	CP SIGNAL NOK	Try to start another charging session with the same cable or use a different cable. If the error persists, contact support.
15	EV DIODE FAULT	Connect an EV to I-ON EVO.
20	PEN FAULT	Check the status of the mains electricity supply with your installer. When the mains electricity problem disappears, restart I-ON EVO.
22	ADC COMMUNICATION FAULT	If the error persists, contact support.
24	INPUT POWER SUPPLY NOK	Check the power supply connected to I-ON EVO with your installer.
25	ETH PORT NOK	If the error persists, contact support.

I-ON EVOLUTION

26	WIFI NOK	If the error persists, contact support.
27	EXTERNAL CT NOK	Check the connection and wiring with the installer according to the instructions in the dedicated user manual. If the error persists, contact support.
28	EV OVERLOAD	Try to start another charging session. If the error persists, contact support.
29	CHARGING SUSPENDED - VENTILATION NOT WORKING	No corrective action possible.
31	UNDER VOLTAGE	Check the power supply connected to I-ON EVO with your installer. Check also the status of MCB and RCD devices in the middle of the product.
32	DC LEAKAGE FAULT	Check the power supply connected to I-ON EVO with your installer.
33	IoT PROBLEM	Check the Internet connection and the service availability of the platform the charging station is connected to.
34	TIC COMMUNICATION	Check the status of the connection with the external meter with your installer. If the error persists, contact support.
35	OTA DECRYPT ERROR	Contact support
36	OTA CHECKSUM ERROR	Contact support
37	S/C SERVER COMMUNICATION ERROR	Check that the Ethernet cable connecting the Client station to the charger network is intact.
38	GROUPING OCPP CLIENT	Check that the Ethernet cable connecting the Client station to the charger network is intact.
39	S/C ERROR: COMMUNICATION WITH METER	Check that the chosen meter is properly connected and working. Attempt a Server station reboot if necessary.
40	UNAUTHORISED OFFLINE CHARGING	Modify the 'Offline authentication behaviour' parameter as appropriate from the on-board portal

14. Assistance

The Support Service allows you to come into direct contact with GEWISS technical officials, to obtain answers to technical questions: plant engineering, regulatory, product or design software questions.

If you need support refer to:

- the page <https://www.gewiss.com/ww/en/services/support> and find out OPEN A TICKET
- or scan the QRcode to be redirected to the correct page and open a ticket

DIRECT LINK



Punto di contatto indicato in adempimento ai fini delle direttive e regolamenti UE applicabili:

Contact details according to the relevant European Directives and Regulations:

GEWISS S.p.A. Via D.Bosatelli, 1 IT-24069 Cenate Sotto (BG) Italy tel: +39 035 946 111 E-mail: qualitymarks@gewiss.com

According to applicable UK regulations, the company responsible for placing the goods in UK market is:

GEWISS UK LTD - Unity House, Compass Point Business Park, 9 Stocks Bridge Way, ST IVES
Cambridgeshire, PE27 5JL, United Kingdom tel: +44 1954 712757 E-mail: gewiss-uk@gewiss.com



+39 035 946 111

8:30 - 12:30 / 14:00 - 18:00

lunedì - venerdì / monday - friday



www.gewiss.com

